S&ME

June 26, 1996

Mr. W. Waddell Watters
North Carolina Department of Environment,
Health and Natural Resources
Winston-Salem Regional Office-Groundwater Section
8025 North Point Blvd., Suite 100
Winston-Salem, NC 27106

Reference: Response to State Letter of June 11, 1996
NCDEHNR Incident No. 10119
Unocal Corporation
Former Unocal Facility #9787-214 (Former Red Horse Truck Stop)
1342 Trollingwood Road, Mebane, NC
S&ME Project No. 1354-94-603

Dear Mr. Waters:

In response to your letter of June 11, 1996 pertaining to "Review of State Trust Fund Documentation" (attached), we offer the following information and explanation.

Response to First Comment

- Documentation on the vertical extent of the contaminant plume was generally indicated in the April 14, 1993 Addendum Report of Comprehensive Site Assessment (CSA), as indicated in Table 4 (Results of Laboratory Analyses-attached) and the well construction log for the deep (Type III) monitor well MW-5 (attached). Table 4 of the CSA Addendum indicates that benzene was the only parameter exceeding the 2L standard for MW-5 (55 ug/L) on 3/24/93. This concentration was substantially lower than that in the former "hotspot" monitor well MW-4, which exhibited a benzene concentration of 26,800 ug/L on 1/18/93 (Table 4 of the 2/19/93 CSA report-attached. Monitor well MW-4 is located 25 feet southeast of MW-5, as indicated on the site map (Figure 1). The dramatic difference in BTEX concentrations at 49.5 feet at MW-5, as compared to those at 16.5 feet deep at MW-4 (over a distance of 25 feet away), indicates that the vertical

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Mailing address: P.O. Box 7668, Charlotte, North Carolina 28241-7668

component of the dissolved gasoline plume is essentially defined. The 12/18/95 benzene concentration in groundwater from MW-5 was below the detection limit (1 ug/L). No dissolved hydrocarbons were detected in groundwater from MW-5 for BTEX, MTBE, IPE, or Methods 601 and 610 compounds on 12/18/95 (laboratory results attached). Therefore, the vertical extent of the Unocal groundwater plume is defined. Table 1 indicates historical groundwater quality for the site.

The lithologic log for deep well MW-5 cannot be located. S&ME can perform a new soil boring adjacent to MW-5 to re-evaluate the geology in this area to a depth of 54.5 feet (similar to MW-5), if required by the State. MW-5 was installed on March 18, 1993, as indicated on the well construction log.

Response to Second Comment

- A temporary monitor well (TMW-8) was installed on private property (Mr. Bennie Rowland) to evaluate the downgradient horizontal extent of the dissolved gasoline plume. Figure 1 illustrates the former location of TMW-8. Dissolved hydrocarbons were not detected in groundwater sampled from this well, as verbally reported to me by Joe Best (formerly of S&ME) in 1993. Analytical results for TMW-8 were previously submitted to the State, however, those reports cannot be located. A permanent well was not allowed by Mr. Rowland for the CSA and was again denied during a December 6, 1995 phone conversation. He plans to sell the property and does not want a monitor well on the property. S&ME submitted a Right of Way Encroachment Agreement (attached) to the NCDOT on November 30, 1995 for the purpose of obtaining permission to install a permanent MW-8 in the NCDOT right of way. Mr. Mike Venable of the NCDOT stated verbally to S&ME on December 6, 1995 that our request was denied and they returned the

agreement back to us. The reason for denial was that the future expansion of the intersection, and that it would be very difficult to obtain approval. Also the NCDOT stated that they wanted to move the well from its proposed position (See Figure 2 of the Encroachment Agreement) further south along Trollingwood Rd. Moving MW-8 would not allow us to adequately monitor the downgradient extent of the hydrocarbon plume. Proposed permanent monitor well MW-8 would have been approximately 210 feet northwest (hydraulically downgradient) of on-site monitor well MW-4. In addition, the NCDOT required that they have a letter from the NCDEHNR justifying the encroachment, as written on the cover of the encroachment agreement by the NCDOT. Therefore, S&ME does not have access to monitor the downgradient plume extent due to denial from the NCDOT and private property owner to install a permanent monitor well (MW-8).

S&ME could install an alternative downgradient monitor well (MW-8) at the northwest property corner, if required by the State. Figure 1 illustrates this proposed well location. This new MW-8 location may now be sufficient (after much remediation) to monitor the downgradient extent.

As you are aware, this site is in the Commercial Trust Fund Reimbursement Program. Therefore, we would appreciate your response or requests in writing, if any additional work is required, so that we can seek reimbursement. If you have any questions or need additional information, please do not hesitate to call.

Sincerely,

S&ME, Inc.

Stewart Hines 6/27/96

Stewart M. Hines, L.G.
Senior Geologist

NORTH CAROLINA LICENSED SEAL 1199 GEOLOGIST STEWART MARTIN HINES

Al Quarles, L.G.
Senior Hydrogeologist

Enclosures

cc: Mr. Wayne Holt - Unocal Corporation
Rick Holshouser - S&ME, Inc.

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State of North Carolina
Department of Environment,
Health and Natural Resources
Winston-Salem Regional Office

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary

DEHNR

DIVISION OF ENVIRONMENTAL
MANAGEMENT
GROUNDWATER SECTION

June 11, 1996

Wayne Holt
Unocal Corporation
P.O. Box 4147
Atlanta, GA 30302

SUBJECT: Review of State Trust Fund Reimbursement Package, Red Horse Truck Stop, Mebane, Alamance County, Incident Number 10119

Dear Mr. Holt:

The technical review of the above referenced project has been started in the Winston-Salem Regional Office. Your package is unreviewable because more information is needed at this time. The problems are that:

- There is no documentation on the vertical extent of the contaminant plume. The information in the comprehensive site assessment, and subsequent addendum, do not include a 'Test Boring Log' for MW-5.

- There is no compliance well placed down gradient from the plume center. How are you monitoring the down gradient extent of the contamination?

This information is necessary for the proper evaluation of the incident. Please have this information in this office by July 1, 1996. If this information is not received by that date, your package will be returned unprocessed. Questions should be directed to me at the number below.

Sincerely,

W. Waddell Watters
Hydrogeologist

cc WSRO, Trust Fund Group

585 Waughtown Street
Winston-Salem, North Carolina 27107-2241
Voice 910-771-4600

FAX 910-771-4632

(From CSA Addendum Report of 4/14/93)

TABLE 4
RESULTS OF LABORATORY ANALYSES
BTEX - GROUNDWATER SAMPLES
RED HORSE TRUCK STOP
FORMER UNOCAL STATION #9787-214
MEBANE, NORTH CAROLINA
S&ME JOB NO. 1584-92-080

Location	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-6	ND	ND	ND	ND
MW-7	ND	ND	ND	ND
MW-5	55	95	20	120

ND - not detected
ppb - parts per billion
Sample Date - 3/17/93 (MW-6 & 7)
- 3/24/93 (MW-5)

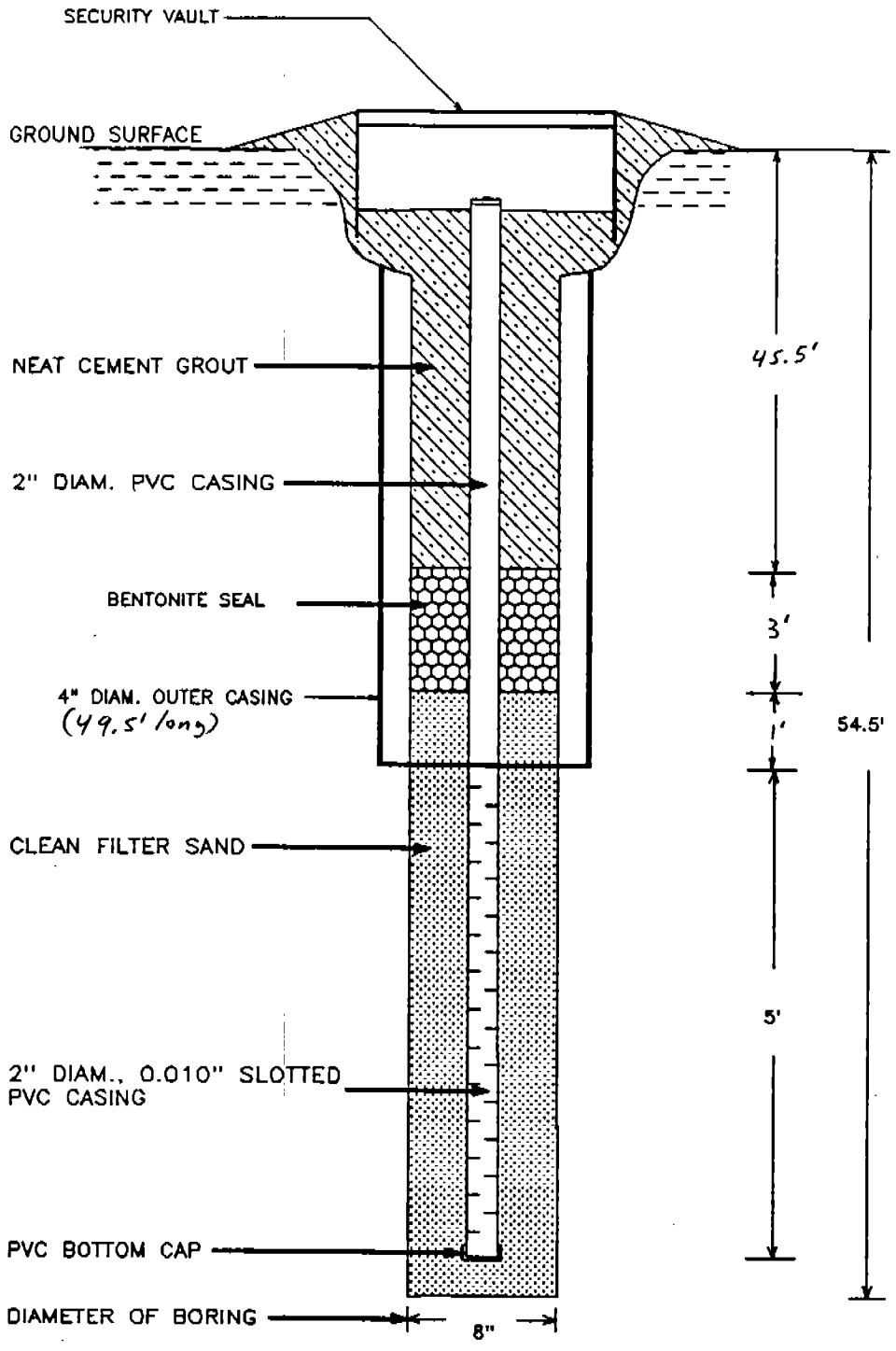
(From CSA Report of 2/19/93)

TABLE 4
RESULTS OF LABORATORY ANALYSES
BTEX - GROUNDWATER SAMPLES
FORMER UNOCAL STATION 9787-214
MEBANE, NORTH CAROLINA
S&ME JOB NO. 1584-92-080

Location	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-1	ND	ND	ND	ND
MW-2	120	65	4.2	160
MW-3	84	82	5.1	590
MW-4	26,800	42,000	5,200	24,000

ND - not detected
ppb - parts per billion
Sample Date - 1/18/93

(From CSA Addendum Report of 4/14/93)



WELL NO. MW-5

SCREEN SLOT SIZE: .010

INSTALLATION DATE: 3/18/93

GROUNDWATER LEVEL: 15.5'

(DEPTH BELOW GROUND SURFACE)

S&ME, INC.

GREENSBORO, NORTH CAROLINA

DATE:	APPROVED BY:	DRAWN BY:
04-08-93	SR	VLR

FORMER UNOCAL STATION #9787-214
MEBANE, NORTH CAROLINA

MONITOR WELL SCHEMATIC

DRAWING NO.

TABLE 1
HISTORICAL GROUNDWATER QUALITY DATA

FORMER UNOCAL FACILITY #9787-214
1342 TROLLINGWOOD ROAD, MEBANE, NC
S&ME PROJECT #1354-94-603

MONITOR WELL	DATE	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	TOTAL BTEX	MTBE	IPE	METHOD 601 COMPONDS	METHOD 625/610 COMPOUNDS
MW-1	1/7/93	BQL	120	BQL	120	240	NA	NA	NA	NA
	1/18/93	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
	11/10/94	BQL	BQL	BQL	BQL	BQL	BQL	NA	BQL	BQL
	3/12/95	BQL	BQL	BQL	BQL	BQL	1.11	BQL	BQL	BQL
	12/18/95	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5-5	<1
	2/21/96	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5-5	<1
MW-2	1/7/93	810	20,000	17,000	95,000	132,810	NA	NA	NA	NA
	1/18/93	120	65	4.2	160	349.2	BQL	BQL	7.9	28
	11/10/94	BQL	BQL	BQL	BQL	BQL	BQL	NA	BQL	BQL
	3/12/95	BQL	BQL	BQL	BQL	BQL	1.5	BQL	BQL	BQL
	12/18/95	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5-5	<1
	2/21/96	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5-5	<1
MW-3	1/7,11/93	BQL	1300	2100	13,000	16,400	NA	NA	NA	NA
	1/26/93	84	82	5.1	590	761.1	BQL	BQL	8.4	22
	11/10/94	BQL	BQL	18.5	184	203	BQL	NA	13.2	BQL
	3/12/95	BQL	BQL	BQL	1.52	1.52	0.54	1.73	3.38	BQL
	12/18/95	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	7.53	<1
	2/21/96	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	5.53	<1
MW-4	1/11/93	BQL	1700	4900	31,000	37,600	NA	NA	NA	NA
	1/18/93	26,800	42,000	5200	24,000	98,000	12,000	BQL	6.8	6600
	11/10/94	22,100	40,100	4710	20,500	87,400	15,700	NA	29.3	431.5
	3/12/95	3150	4480	1830	2250	11,700	4370	<1	33.09	2710
	12/18/95	2840	5700	1170	5310	15000	3750	<1	<5-50	787.58
	2/21/96	821	1340	344	1990	4490	1810	<1	<5-50	119.3
MW-5	3/24/93	55	95	20	120	290	NA	NA	NA	NA
	12/18/95	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5-5	<1
MW-6	3/8,17/93	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
	11/10/94	BQL	BQL	BQL	BQL	BQL	BQL	NA	BQL	BQL
	3/12/95	BQL	1.61	0.754	4.16	6.52	BQL	BQL	BQL	BQL
	12/18/95	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5-5	<1
	2/21/96	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5-5	<1
MW-7	3/8,17/93	BQL	BQL	BQL	BQL	BQL	BQL	BQL	6.5	BQL
	11/10/94	BQL	BQL	BQL	BQL	BQL	BQL	NA	1.4	BQL
	3/12/95	BQL	BQL	BQL	BQL	BQL	BQL	NA	1.25	BQL
	12/18/95	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5-5	<1
	2/21/96	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5-5	<1
15A NCAC 2L STANDARD (IN UG/L)		**1**	**1000**	**29**	**530**	**NA**	**70**	**NA**	**NA**	**NA**

project\1996\UMEBWQ.QK1

NOTES:

* ALL CONCENTRATIONS IN GROUNDWATER ARE IN UG/L
* ANALYSES PERFORMED = METHODS 602 (BTEX, MTBE AND IPE)
  METHOD 601 (PURGEABLE HALOCARBONS)
  METHOD 625 OR 610 (SEMI-VOLATILES)
* NA = NOT ANALYZED
* BQL = BELOW QUANTITATION LIMIT
* THE 15A NCAC 2L GROUNDWATER STANDARD FOR COMPOUNDS NOT INCLUDED IN THE STANDARD IS THE METHOD
* DETECTION LIMIT, EXCEPT FOR BTEX AND THE SUM OF METHOD 601 AND 625/610 COMPOUNDS

FLOWERS

CHEMICAL LABORATORIES INCORPORATED

Received From:
S&ME-Greensboro
3718 Old Battleground Rd.
Greensboro,NC 27410

Date Reported : Dec22 1995
Project Number : UNOCAFE#335927785
PO Number : 9787214
FDHRSDW Number : 83139
FHRS ENVNumber : E83018
FDER COMQAPNum : 86-0008G
LDHH Number : 94-23
NCDEHNR Number : 296
SCDHEC Number : 96019

For: IPE601/602 EPA610 Discount Discount
Date Sampled:Dec18 1995 Date Received:Dec19 1995 Lab Numbers: 8591-8597 (Deep Type III MW)

REPORT OF ANALYSIS

Parameter	Unit	Method Detection Limit	%ACC	%PRC	8591 MW1	8592 MW2	8593 MW3	8594 MW4	8595 MW5
Dilution_Factor		-	-	-	1.00	1.00	1.00	10.0	1.00
1,1,1-trichloroethan	ug/L	1.00	99.2	2.53	<1.00	<1.00	<1.00	<10.0	<1.00
1,1,2,2-tetrachloroe	ug/L	1.00	97.7	.170	<1.00	<1.00	<1.00	<10.0	<1.00
1,1,2-trichloroethan	ug/L	1.00	93.3	2.17	<1.00	<1.00	<1.00	<10.0	<1.00
1,1-dichloroethane	ug/L	1.00	106.	5.29	<1.00	<1.00	<1.00	<10.0	<1.00
1,1-dichloroethene	ug/L	1.00	106.	8.41	<1.00	<1.00	<1.00	<10.0	<1.00
1,2-dichloroethane	ug/L	1.00	94.0	4.48	<1.00	<1.00	7.52	<10.0	<1.00
1,2-dichloropropane	ug/L	1.00	97.3	4.05	<1.00	<1.00	<1.00	<10.0	<1.00
2-chloroethylvinylet	ug/L	1.00			<1.00	<1.00	<1.00	<10.0	<1.00
Bromodichloromethane	ug/L	1.00	95.4	1.62	<1.00	<1.00	<1.00	<10.0	<1.00
Bromoform	ug/L	1.00	90.5	.540	<1.00	<1.00	<1.00	<10.0	<1.00
cis-1,3-dichloroprop	ug/L	1.00	99.5	11.0	<1.00	<1.00	<1.00	<10.0	<1.00
Carbon tetrachloride	ug/L	1.00	96.3	3.62	<1.00	<1.00	<1.00	<10.0	<1.00
Chloroform	ug/L	1.00	90.3	5.88	<1.00	<1.00	<1.00	<10.0	<1.00
Dibromochloromethane	ug/L	1.00	100.	.950	<1.00	<1.00	<1.00	<10.0	<1.00
Methylene chloride	ug/L	1.00	96.1	1.11	<1.00	<1.00	<1.00	<10.0	<1.00
trans-1,3,-dichlorop	ug/L	1.00	102.	2.91	<1.00	<1.00	<1.00	<10.0	<1.00
Trichlorofluorometha	ug/L	2.00	104.	6.44	<2.00	<2.00	<2.00	<20.0	<2.00
t-1,2-dichloroethene	ug/L	1.00	108.	1.37	<1.00	<1.00	<1.00	<10.0	<1.00
Trichloroethene	ug/L	1.00	103.	14.5	<1.00	<1.00	<1.00	<10.0	<1.00
Tetrachloroethene	ug/L	1.00	105.	4.57	<1.00	<1.00	<1.00	<10.0	<1.00
1,2-dibromo-3-chloro	ug/L	1.00	93.0	6.93	<1.00	<1.00	<1.00	<10.0	<1.00
Bromomethane	ug/L	5.00			<5.00	<5.00	<5.00	<50.0	<5.00
Chlorobenzene	ug/L	0.500	101.	1.22	<0.500	<0.500	<0.500	<5.00	<0.500
Chloroethane	ug/L	3.00	88.2	17.3	<3.00	<3.00	<3.00	<30.0	<3.00
Chloromethane	ug/L	5.00			<5.00	<5.00	<5.00	<50.0	<5.00

Data Release Authorization
Sample integrity and reliability certified by Lab personnel prior to analysis.
Methods of analysis in accordance with FCL QA and EPA approved methodology.
This Report may not be reproduced in part, results relate only to items tested.

Jefferson S. Flowers, Ph.d.
President/Technical Director

Jefferson L. Flowers, Ph.D
Jefferson S. Flowers, Ph.D
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FLOWERS
CHEMICAL
LABORATORIES
INCORPORATED

Received From:
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3718 Old Battleground Rd.
Greensboro,NC 27410

Date Reported : Dec22 1995
Project Number : UNOCAFE#335927785
PO Number : 9787214
FDHRSDW Number : 83139
FHRS ENVNumber : E83018
FDER COMQAPNum : 86-0008G
LDHH Number : 94-23
NCDEHNR Number : 296
SCDHEC Number : 96019

For: IPE601/602 EPA610 Discount Discount
Date Sampled:Dec18 1995 Date Received:Dec19 1995 Lab Numbers: 8591-8597

REPORT OF ANALYSIS

Parameter	Unit	Method Detection Limit	%ACC	%PRC	8596 MW6	8597 MW7
Dilution_Factor		-	-	-	1.00	1.00
1,1,1-trichloroethan	ug/L	1.00	99.2	2.53	<1.00	<1.00
1,1,2,2-tetrachloroe	ug/L	1.00	97.7	.170	<1.00	<1.00
1,1,2-trichloroethan	ug/L	1.00	93.3	2.17	<1.00	<1.00
1,1-dichloroethane	ug/L	1.00	106.	5.29	<1.00	<1.00
1,1-dichloroethene	ug/L	1.00	106.	8.41	<1.00	<1.00
1,2-dichloroethane	ug/L	1.00	94.0	4.48	<1.00	<1.00
1,2-dichloropropane	ug/L	1.00	97.3	4.05	<1.00	<1.00
2-chloroethylvinylet	ug/L	1.00			<1.00	<1.00
Bromodichloromethane	ug/L	1.00	95.4	1.62	<1.00	<1.00
Bromoform	ug/L	1.00	90.5	.540	<1.00	<1.00
cis-1,3-dichloroprop	ug/L	1.00	99.5	11.0	<1.00	<1.00
Carbon tetrachloride	ug/L	1.00	96.3	3.62	<1.00	<1.00
Chloroform	ug/L	1.00	90.3	5.88	<1.00	<1.00
Dibromochloromethane	ug/L	1.00	100.	.950	<1.00	<1.00
Methylene chloride	ug/L	1.00	96.1	1.11	<1.00	<1.00
trans-1,3,-dichlorop	ug/L	1.00	102.	2.91	<1.00	<1.00
Trichlorofluorometha	ug/L	2.00	104.	6.44	<2.00	<2.00
t-1,2-dichloroethene	ug/L	1.00	108.	1.37	<1.00	<1.00
Trichloroethene	ug/L	1.00	103.	14.5	<1.00	<1.00
Tetrachloroethene	ug/L	1.00	105.	4.57	<1.00	<1.00
1,2-dibromo-3-chloro	ug/L	1.00	93.0	6.93	<1.00	<1.00
Bromomethane	ug/L	5.00			<5.00	<5.00
Chlorobenzene	ug/L	0.500	101.	1.22	<0.500	<0.500
Chloroethane	ug/L	3.00	88.2	17.3	<3.00	<3.00
Chloromethane	ug/L	5.00			<5.00	<5.00

Data Release Authorization
Sample integrity and reliability certified by Lab personnel prior to analysis.
Methods of analysis in accordance with FCL QA and EPA approved methodology.
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Jefferson S. Flowers, Ph.d.
President/Technical Director

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LDHH Number : 94-23
NCDEHNR Number : 296
SCDHEC Number : 96019

For: IPE601/602 EPA610 Discount Discount
Date Sampled:Dec18 1995 Date Received:Dec19 1995 Lab Numbers: 8591-8597

REPORT OF ANALYSIS

Parameter	Unit	Method Detection Limit	%ACC	%PRC	8591 MW1	8592 MW2	8593 MW3	8594 MW4	8595 MW5
Dichlorodifluorometh	ug/L	2.00			<2.00	<2.00	<2.00	<20.0	<2.00
Vinyl chloride	ug/L	0.500			<0.500	<0.500	<0.500	<5.00	<0.500
o-dichlorobenzene	ug/L	0.500	110.	3.09	<0.500	<0.500	<0.500	<5.00	<0.500
m-dichlorobenzene	ug/L	0.500	112.	8.38	<0.500	<0.500	<0.500	<5.00	<0.500
Para-dichlorobenzene	ug/L	0.500	108.	7.32	<0.500	<0.500	<0.500	<5.00	<0.500
Hall_Spike	ug/L	0.500	102.	.970	101.	101.	101.	98.0	100.
- -		-	-	-	-	-	-	-	-
Acenaphthylene	ug/L	1.00			<1.00	<1.00	<1.00	<1.00	<1.00
Acenaphthene	ug/L	1.00	61.8	1.20	<1.00	<1.00	<1.00	2.98	<1.00
Anthracene	ug/L	1.00	57.3	1.02	<1.00	<1.00	<1.00	1.05	<1.00
Benzo(a)anthracene	ug/L	1.00			<1.00	<1.00	<1.00	<1.00	<1.00
Benzo(a)pyrene	ug/L	1.00			<1.00	<1.00	<1.00	<1.00	<1.00
Benzo(b)fluoranthene	ug/L	1.00			<1.00	<1.00	<1.00	<1.00	<1.00
Benzo(g,h,i)perylene	ug/L	1.00			<1.00	<1.00	<1.00	<1.00	<1.00
Benzo(k)fluoranthene	ug/L	1.00			<1.00	<1.00	<1.00	<1.00	<1.00
Chrysene	ug/L	1.00			<1.00	<1.00	<1.00	<1.00	<1.00
Dibnz(a,h)anthracene	ug/L	1.00			<1.00	<1.00	<1.00	<1.00	<1.00
Fluoranthene	ug/L	1.00			<1.00	<1.00	<1.00	<1.00	<1.00
Fluorene	ug/L	1.00	60.4	.670	<1.00	<1.00	<1.00	1.90	<1.00
Indn(1,2,3-cd)pyrene	ug/L	1.00			<1.00	<1.00	<1.00	<1.00	<1.00
Naphthalene	ug/L	1.00	60.6	4.76	<1.00	<1.00	<1.00	465.	<1.00
1-methyl-Naphthalene	ug/L	1.00	63.5	4.04	<1.00	<1.00	<1.00	113.	<1.00
2-methyl-Naphthalene	ug/L	1.00	58.6	6.90	<1.00	<1.00	<1.00	198.	<1.00
Phenanthrene	ug/L	1.00	60.0	.110	<1.00	<1.00	<1.00	5.65	<1.00
Pyrene	ug/L	1.00			<1.00	<1.00	<1.00	<1.00	<1.00
Intl_QA_Spike(2FBP)	ug/L	1.00	62.2	6.52	39.5	36.4	64.1	73.6	77.7

Data Release Authorization

...le integrity and reliability certified by Lab personnel prior to analysis.
... analysis in acco... with FCL QA and EPA app...oved methodology.
... ...n of t, results relate o...y to items tested.

FLOWERS
CHEMICAL
LABORATORIES
INCORPORATED

Received From:
S&ME-Greensboro
3718 Old Battleground Rd.
Greensboro,NC 27410

Date Reported : Dec22 1995
Project Number : UNOCAFE#335927785
PO Number : 9787214
FDHRSDW Number : 83139
FHRS ENVNumber : E83018
FDER COMQAPNum : 86-0008G
LDHH Number : 94-23
NCDEHNR Number : 296
SCDHEC Number : 96019

For: IPE601/602 EPA610 Discount Discount
Date Sampled:Dec18 1995 Date Received:Dec19 1995 Lab Numbers: 8591-8597

REPORT OF ANALYSIS

Parameter	Unit	Detection Limit	Method	%ACC	%PRC	8596 MW6	8597 MW7
Dichlorodifluorometh	ug/L	2.00				<2.00	<2.00
Vinyl chloride	ug/L	0.500				<0.500	<0.500
o-dichlorobenzene	ug/L	0.500	110.	3.09		<0.500	<0.500
m-dichlorobenzene	ug/L	0.500	112.	8.38		<0.500	<0.500
Para-dichlorobenzene	ug/L	0.500	108.	7.32		<0.500	<0.500
Hall_Spike	ug/L	0.500	102.	.970		100.	99.3
- -		-	-	-		-	-
Acenaphthylene	ug/L	1.00				<1.00	<1.00
Acenaphthene	ug/L	1.00	61.8	1.20		<1.00	<1.00
Anthracene	ug/L	1.00	57.3	1.02		<1.00	<1.00
Benzo(a)anthracene	ug/L	1.00				<1.00	<1.00
Benzo(a)pyrene	ug/L	1.00				<1.00	<1.00
Benzo(b)fluoranthene	ug/L	1.00				<1.00	<1.00
Benzo(g,h,i)perylene	ug/L	1.00				<1.00	<1.00
Benzo(k)fluoranthene	ug/L	1.00				<1.00	<1.00
Chrysene	ug/L	1.00				<1.00	<1.00
Dibnz(a,h)anthracene	ug/L	1.00				<1.00	<1.00
Fluoranthene	ug/L	1.00				<1.00	<1.00
Fluorene	ug/L	1.00	60.4	.670		<1.00	<1.00
Indn(1,2,3-cd)pyrene	ug/L	1.00				<1.00	<1.00
Naphthalene	ug/L	1.00	60.6	4.76		<1.00	<1.00
1-methyl-Naphthalene	ug/L	1.00	63.5	4.04		<1.00	<1.00
2-methyl-Naphthalene	ug/L	1.00	58.6	6.90		<1.00	<1.00
Phenanthrene	ug/L	1.00	60.0	.110		<1.00	<1.00
Pyrene	ug/L	1.00				<1.00	<1.00
Intl_QA_Spike(2FBP)	ug/L	1.00	62.2	6.52		65.6	61.6

Data Release Authorization
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Methods of analysis in accordance with FCL QA and EPA approved methodology.
This Report may not be reproduced in part, results relate only to items tested.

Jefferson L. Flowers, Ph.d.
President/Technical Director

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FLORIDA 32715 - 0597
BUS: (407) 339-5984
FAX: (407) 260-6110

FLOWERS
CHEMICAL
LABORATORIES
INCORPORATED

Received From:
S&ME-Greensboro
3718 Old Battleground Rd.
Greensboro,NC 27410

Date Reported : Dec22 1995
Project Number : UNOCAFE#335927785
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SCDHEC Number : 96019

For: IPE601/602 EPA610 Discount Discount
Date Sampled:Dec18 1995 Date Received:Dec19 1995 Lab Numbers: 8591-8597

REPORT OF ANALYSIS

Parameter	Unit	Method Detection Limit	%ACC	%PRC	8591 MW1	8592 MW2	8593 MW3	8594 MW4	8595 MW5
Surr_Spike(DBBP)	ug/L	1.00			52.3	58.3	70.8	36.5	82.0
PAH_Extraction	-	-			-	-	-	-	-
Dilution_Factor		-	-	-	-	-	-	-	-
o-dichlorobenzene	ug/L	0.500	110.	3.09	<0.500	<0.500	<0.500	<0.500	<0.500
m-dichlorobenzene	ug/L	0.500	112.	8.38	<0.500	<0.500	<0.500	<0.500	<0.500
Para-dichlorobenzene	ug/L	0.500	108.	7.32	<0.500	<0.500	<0.500	<0.500	<0.500
Benzene	ug/L	0.500	98.7	4.80	<0.500	<0.500	<0.500	2840	<0.500
Chlorobenzene	ug/L	0.500	101.	1.22	<0.500	<0.500	<0.500	<0.500	<0.500
Ethylbenzene	ug/L	0.500	96.6	3.49	<0.500	<0.500	<0.500	1170	<0.500
Toluene	ug/L	0.500	97.0	4.35	<0.500	<0.500	<0.500	5700	<0.500
Xylene	ug/L	0.500	98.2	8.38	<0.500	<0.500	<0.500	5310	<0.500
Methyl-tert-butyleth	ug/L	0.500	95.8	1.13	<0.500	<0.500	<0.500	3750	<0.500
Total_BTEX	ug/L	0.500	97.8	2.11	<0.500	<0.500	<0.500	15000	<0.500
Isopropylether	ug/L	1.00			<1.00	<1.00	<1.00	<1.00	<1.00
PID_Spike	ug/L	0.500	93.7	9.42	92.0	102.	101.	99.6	100.
- -		-	-	-	-	-	-	-	-

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For: IPE601/602 EPA610 Discount Discount
Date Sampled:Dec18 1995 Date Received:Dec19 1995 Lab Numbers: 8591-8597

REPORT OF ANALYSIS

Parameter	Unit	Method Detection Limit	%ACC	%PRC	8596 MW6	8597 MW7
Surr_Spike(DBBP)	ug/L	1.00			108.	100.
PAH_Extraction	-	-			-	-
Dilution_Factor		-	-	-	-	-
o-dichlorobenzene	ug/L	0.500	110.	3.09	<0.500	<0.500
m-dichlorobenzene	ug/L	0.500	112.	8.38	<0.500	<0.500
Para-dichlorobenzene	ug/L	0.500	108.	7.32	<0.500	<0.500
Benzene	ug/L	0.500	98.7	4.80	<0.500	<0.500
Chlorobenzene	ug/L	0.500	101.	1.22	<0.500	<0.500
Ethylbenzene	ug/L	0.500	96.6	3.49	<0.500	<0.500
Toluene	ug/L	0.500	97.0	4.35	<0.500	<0.500
Xylene	ug/L	0.500	98.2	8.38	<0.500	<0.500
Methyl-tert-butyleth	ug/L	0.500	95.8	1.13	<0.500	<0.500
Total_BTEX	ug/L	0.500	97.8	2.11	<0.500	<0.500
Isopropylether	ug/L	1.00			<1.00	<1.00
PID_Spike	ug/L	0.500	93.7	9.42	100.	100.
- -		-	-	-	-	-

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P.O. BOX 150-597
ALTAMONTE SPRINGS
FLORIDA 32715-0597
BUS: (407) 339-5984
FAX: (407) 260-6110

CHAIN OF CUSTODY RECORD

Client: UNOCAL
Address: MEBANE, NC
Phone:
Sampled By (PRINT): GARY SIMCOX
Sampler Signature:
Date Sampled: 12/18/95

FCL Client No.:
FCL Project Manager:
FCL Lab Coordinator:
Requested Due Date:

AFE # 35927785
P.O. Number: 21670
RELEASE # AWA013
Project Name / No.: SITE # 9707214
Contact: CERT CRBS # 3604

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	LAB NO.	NO. OF CONTAINERS	PRESERVATIVES: UNPRESERVED	H_2SO_4	HNO_3	HCl			ANALYSES REQUEST: 601, 602, MTBE, IPE	610								
1	MW-1	11:30		8591	4	1			3			X	X								
2	MW-2	12:30		92	4	1			3			X	X								
3	MW-3	12:00		93	4	1			3			X	X								
4	MW-4	1:40		94	4	1			3			X	X								
5	MW-5	2:00		95	4	1			3			X	X								
6	MW-6	11:00		8596	4	1			3			X	X								

CARRIER	BAILERS	SHIP DATES: OUT / DATE	SHIP DATES: RETURNED / DATE

SPECIAL INSTRUCTIONS

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	12/18	1:10		12/19	1024

SHIP WITH SAMPLES/TO BE RETURNED WITH RESULTS

CHEMICAL LABORATORIES INCORPORATED

Jefferson L. Flowers, Ph.D.
Jefferson S. Flowers, Ph.D.
481 NEWBURYPORT
P.O. BOX 150-597
ALTAMONTE SPRINGS
FLORIDA 32715-0597
BUS: (407) 339-5984
FAX: (407) 260-6110

CHAIN OF CUSTODY RECORD

Client: UNOCAL

Address: MEBANE, NC

Phone:

Sampled By (PRINT): GARY SIMCOX

Sampler Signature: [signature]

Date Sampled: 12/18/95

FCL Client No.:

FCL Project Manager:

FCL Lab Coordinator:

Requested Due Date:

P.O. Number:

Project Name / No.:

Contact:

ITEM NO	SAMPLE DESCRIPTION	TIME	MATRIX	LAB NO.	NO. OF CONTAINERS	PRESERVATIVES: UNPRESERVED	PRESERVATIVES: H_2SO_4	PRESERVATIVES: HNO_3	PRESERVATIVES: HCl	ANALYSES REQUEST: 601, 602, MBBE, ME	ANALYSES REQUEST: 610
1	MW-7	3:00		8597	4	1			3	X	X
2											
3											
4											
5											
6											

CARRIER	BAILERS	SHIP DATES: OUT / DATE	SHIP DATES: RETURNED / DATE

SPECIAL INSTRUCTIONS:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[signature]	12/18	1:10	[signature] FCL	12/18	1024

SHIP WITH SAMPLES/TO BE RETURNED WITH RESULTS

CC: Wayne Holt - Unocal

S&ME

RECEIVED

DEC 6 1995

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS • 7th D...
DISTRICT I ...

NCDOT (Not Approved)
① NOT INC/A
② Need Name @ PH of who call if we have problems in the field
③ Must have a letter from DEHNR/DEM accompanying permit justifying the encroachment.

November 30, 1995

Mr. Michael S. Venable
Assistant District Engineer
NCDOT-Division of Highways
P.O. Box 766
Graham, North Carolina 27253-0766

Reference: **RIGHT OF WAY ENCROACHMENT AGREEMENT**
Interstate 40/85 and Trollingwood Road
Mebane, North Carolina
S&ME Project No. 1354-94-603

Dear Mr. Venable:

Please find enclosed a completed Right-of-Way Encroachment Agreement for work to be performed on the Interstate 40/85 right-of-way at the intersection of Trollingwood Road southwest of Mebane. Also, included is the North Carolina Department of Environment, Health and Natural Resources (NCDEHNR) well permit application for the installation of one groundwater monitor well.

The site vicinity map is shown on Figure 1. The area is located southwest of the intersection of Interstate 40/85 and Trollingwood Road. The monitor well will be located approximately 50 feet from the edge of pavement of Trollingwood Road and approximately 120 feet from the center line of the exit ramp of eastbound Interstate 40. The location of the monitor well is shown on Figure 2. The purpose of the monitor well is to measure to the extent that groundwater contamination has migrated off-site from the former Unocal Fuel Station 9787-214 near Mebane, North Carolina.

Based on S&ME's site reconnaissance, it appears sufficient space is available to locate the monitor well in the NCDOT right-of-way at the proposed location shown on Figure 2.

The completed Encroachment Agreement for the installation of the monitor well is attached. The private land owner located west of the proposed monitor well location refused to allow the construction of a permanent well on his property as he is trying to sell his property. For this reason the monitor well needs to be placed on NCDOT right-of-way.

The monitor well will be installed to approximately 25 feet below grade. A schematic of the proposed well design is shown on Figure 3. The well head will consist of steel flush mounted casing and lid installed at grade. Each well will be secured with a locking well cap. Installation of the monitor well will require approximately one day to complete.

Based on S&ME's site reconaissance, drilling activities should not impact vehicular traffic on either Interstate 40/85 or Trollingwood Road. During the operation of work being performed on the right of way, a Utility Work Ahead sign will be placed on the westbound Interstate 40 exit ramp at Trollingwood Road, and southbound Trollingwood Road 500 feet prior to the work area. The sign will be maintained until all work on the right of way is completed. Upon completion of the monitor well installation, the installation area surface conditions will be restored to pre-construction conditions.

The NCDEHNR requires that a monitor well permit be approved prior to installation of a monitor well on properties not owned by the applicant. The NCDEHNR permit application requires a signiture from an NCDOT-Division of Highways representative. S&ME would greatly appreciate return of the signed NCDEHNR permit application in the enclosed pre-addressed envelope. S&ME will forward the signed application to the NCDEHNR regional office located in Winston-Salem, North Carolina.

The District Engineer's Office will be notified prior to begining construction of the monitor well. Upon completion of the work performed on the right of way, written notice will be

given by S&ME to The North Carolina Department of Transportation of the fact that work on the right of way has been completed.

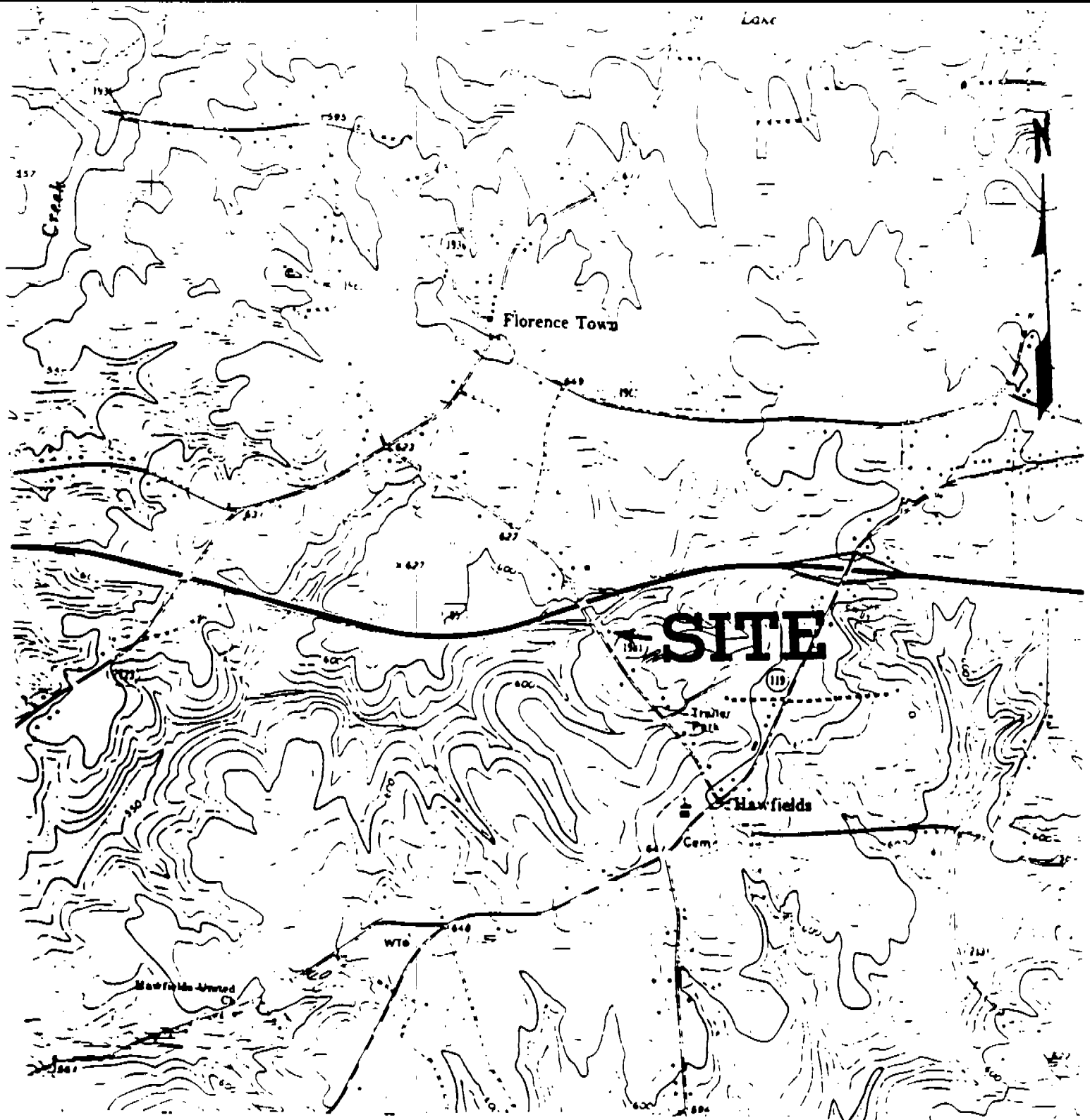
If there are any questions concerning this application or the work being performed, please contact me at (910) 288-7180 at any time.

Sincerely,

S&ME, INC.

Wayne H. Watterson, P.E.
Environmental Department Manager

Attachments NCDOT Right-of-Way Encroachment Agreement
NCDEHNR Monitor Well Permit Application



CONTOUR INTERVAL 10 FEET
DATUM IS MEAN SEA LEVEL

SCALE: AS SHOWN	S&ME ENVIRONMENTAL SERVICES ENGINEERING • TESTING	FORMER UNOCAL STATION 9787-214 MEBANE, NORTH CAROLINA SITE LOCATION MAP	FIGURE NO 1
CHECKED BY: JB			
DRAWN BY: VR			
DATE: 09-08-93		JOB NO: 1584-93-080	

NORTH CAROLINA
ENVIRONMENTAL MANAGEMENT COMMISSION
DEPARTMENT OF ENVIRONMENT, HEALTH, & NATURAL RESOURCES

APPLICATION FOR PERMIT TO CONSTRUCT A MONITORING WELL SYSTEM

Date: November 30, 19 95 County Alamance

In accordance with the provisions of Article 7, Chapter 87, General Statutes of North Carolina and regulations pursuant thereto, application is hereby made for a permit to monitoring wells.

1. Name of Applicant: Unocal Corporation (Telephone:)

   Applicant's Mailing Address: 13 Corporate Square Northeast

2. Name of Property Owner (if different from applicant) NCDOT

   Owner's Mailing Address: P.O. Box 766

3. Contact Person: Michael Venable NCDOT Graham District Eng (Telephone: 910570-6833

4. Location of Property: NCDOT right-of-way along Trollingwood Road at I-40/85

5. Reason for Monitoring Well(s): environmental assessment
   (ex: nondischarge permit requirements, suspected contamination, environmental assessment, etc.)

6. Type of facility or site for which the monitoring well(s) is needed: underground storage tank
   (ex: nondischarge facility, waste disposal site, landfill, underground storage tank, etc.)

7. Type of contamination being monitored (if applicable): petroleum
   (ex: nutrients, organics, heavy metals, etc.)

8. Are any existing recovery wells associated with the monitoring well(s)? no If yes, how many? _____

   Recovery Well Construction Permit No. _____

9. Distance to a known waste or pollution source: 250 feet

10. Are any water supply wells located less than 500 feet from the proposed monitoring wells? no

    If yes, give distance: _____ feet

11. Well Driller: S&ME

12. Registration #: 412

13. Driller's Address: 3100 Spring Forest Road Raleigh, NC 27604

PROPOSED MONITORING WELL CONSTRUCTION INFORMATION

1. Total Number of Wells to be constructed: 1 ; (A) Number to be completed in bedrock? 0

   (B) Number to be completed in unconsolidated material? 1

2. Estimated depth of well(s): 25 feet

3. Gravel or sand pack interval (if appropriate) From 8 feet To 25 feet

4. Type of casing used: PVC
   (ex: PVC, stainless steel, galvanized steel, etc.)

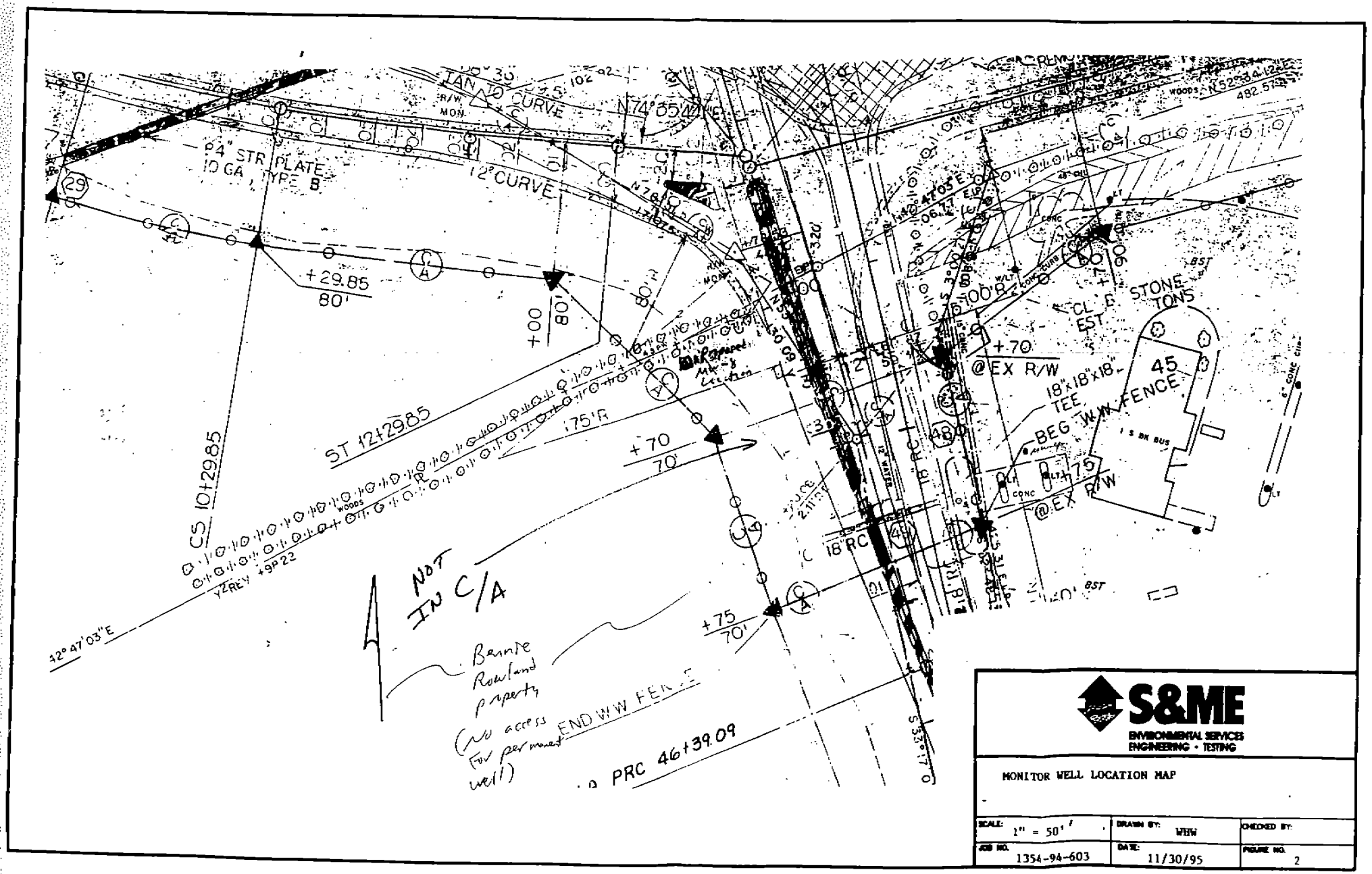
5. Diameter of casing: 2 inches

FOR OFFICE USE ONLY

___ PERMITTED ACTIVITY
___ U.S.T. LEAK DETECTION
___ GROUNDWATER QUALITY STANDARDS VIOLATIONS SUSPECTED FROM UNPERMITTED ACTIVITIES
___ NOTICE OF NON-COMPLIANCE AT UNPERMITTED FACILITIES

PERMIT NO. _____ ISSUED _____ 19 ____

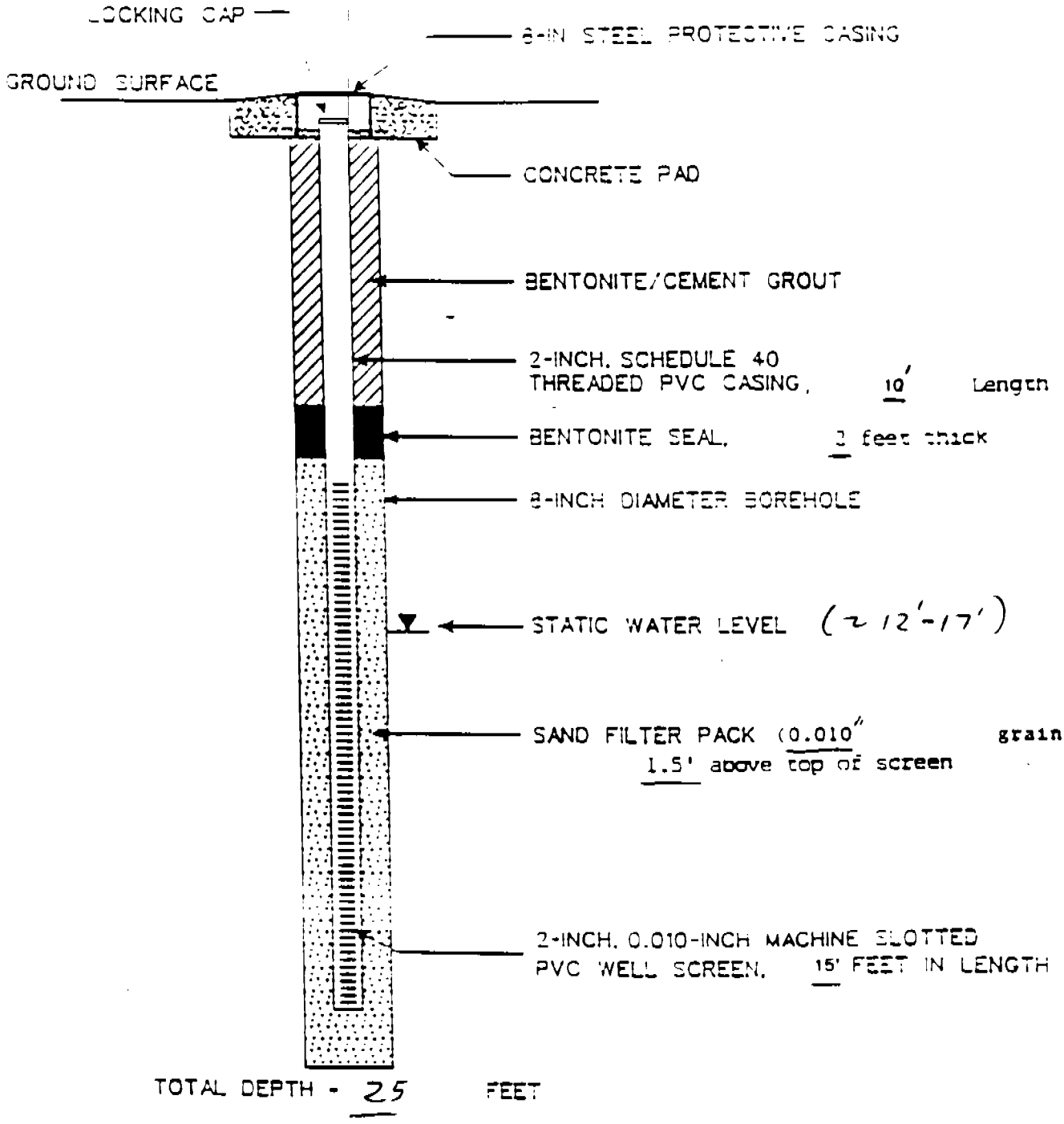
INCIDENT # _____



S&ME
ENVIRONMENTAL SERVICES
ENGINEERING • TESTING

MONITOR WELL LOCATION MAP

SCALE: 1" = 50'	DRAWN BY: WHW	CHECKED BY:
JOB NO. 1354-94-603	DATE: 11/30/95	FIGURE NO. 2



SCALE: NTS	S&ME ENVIRONMENTAL SERVICES ENGINEERING • TESTING	MONITOR WELL SCHEMATIC	FIGURE NO 3
CHECKED BY:			
DRAWN BY:		JOB NO: 1354-94-603	
DATE: 11/30/95			